IN THE CLAIMS:

1. (Currently Amended) A 3-dimensional image acquisition apparatus for acquiring images to be used for 3-dimensionally reconstructing an object by picking up the object twice or more than twice in an image acquisition set including picking up at least once the object carrying a pattern projected onto it, the apparatus comprising:

a camera configured to pick up the object;

a projection light source configured to project light for the purpose of projecting the pattern onto the object;

a light projection information memory configured to store information on projection of light including information on the time for projecting light for the purpose of projecting the pattern in the image acquisition set;

an operation section for allowing an operator to input the information on projection of light including information on the time for projecting the light for the purpose of projecting the pattern in the image acquisition set;

an image acquisition progress information memory configured to store information on the progress of image acquisition in the image acquisition set; and

a controller configured to control the projection of light by the projection light source and the picking up by the camera on the basis of the information on projection of light stored in the light projection information memory and the information on the progress stored in the image acquisition progress information memory.

2. (Original) The apparatus according to claim 1, wherein the information on projection of light includes information on the projection light source output from the projection light source.

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3. (Original) The apparatus according to claim 1, wherein the information on projection of light includes information on the camera output from the camera.

4. (Currently Amended) A 3-dimensional image acquisition apparatus for acquiring images to be used for 3-dimensionally reconstructing an object by picking up the object twice or more than twice in an image acquisition set including picking up at least once the object carrying a pattern projected onto it, the apparatus comprising:

a camera configured to pick up the object;

a projection light source configured to project light for the purpose of projecting the pattern onto the object;

a light projection information memory configured to store information on projection of light including information on the time for projecting light for the purpose of projecting the pattern in the image acquisition set;

an image acquisition progress information memory configured to store information on the progress of image acquisition in the image acquisition set;

a controller configured to control the projection of light by the projection light source and the picking up by the camera on the basis of the information on projection of light stored in the light projection information memory and the information on the progress stored in the image acquisition progress information memory;

The apparatus according to claim 1, further comprising:

a proper image acquisition judging section configured to judge the appropriateness of the image acquisition that one of that is being conducted and has been conducted on the basis of one of the information on projection of light and the information on the progress; and

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an indicator configured to show the judgment result of the proper image

acquisition judging section.

5. (Currently Amended) <u>A 3-dimensional image acquisition apparatus for</u>

<u>acquiring images to be used for 3-dimensionally reconstructing an object by picking up the</u>

<u>object twice or more than twice in an image acquisition set including picking up at least once</u>

<u>the object carrying a pattern projected onto it, the apparatus comprising:</u>

<u>a camera configured to pick up the object;</u>

<u>a projection light source configured to project light for the purpose of</u>

<u>projecting the pattern onto the object;</u>

<u>a light projection information memory configured to store information on</u>

<u>projection of light including information on the time for projecting light for the purpose of</u>

<u>projecting the pattern in the image acquisition set;</u>

<u>an image acquisition progress information memory configured to store</u>

<u>information on the progress of image acquisition in the image acquisition set;</u>

<u>a controller configured to control the projection of light by the projection light</u>

<u>source and the picking up by the camera on the basis of the information on projection of light</u>

<u>stored in the light projection information memory and the information on the progress stored</u>

<u>in the image acquisition progress information memory; and</u>

~~The apparatus according to claims 1, further comprising:~~

a proper image acquisition judging section configured to judge the

appropriateness of the image acquisition that one of that is being conducted and has been

conducted on the basis of one of the information on projection of light and the information on

the progress, wherein

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the controller is adapted to reset the image acquisition progress information

memory so as to make it store the progress information necessary for a first imaging session

when the proper image acquisition judging section determines that the current image

acquisition is not appropriate.

6. (Original) The apparatus according to claim 1, further comprising:

a photometric section configured to acquire information on the luminance of

the object, wherein

the information on projection of light includes information on the luminance

acquired by the photometric section.

7. (Original) The apparatus according to claim 1, wherein

the camera includes one imaging optical system, and

the apparatus further comprises a stereo-adaptor having a light path dividing

optical system adapted to enable the camera to acquire a plurality of images from different

angles when connected to the imaging optical system of the camera.

8. (Original) The apparatus according to claim 1, further comprising an

illumination light source configured to illuminate the object when picking up the object by the

camera.

9. (Original) The apparatus according to claim 8, wherein the information on

projection of light includes information on the illumination light source output from the

illumination light source.

10. (Cancelled)

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11. (Original) The apparatus according to claim 1, wherein the projection light source is adapted to project light at a first imaging session of the image acquisition set.

12. (Currently Amended) A light projection unit to be connected to a camera adapted to continuously picking up an object and output timing signals for one of the timing of picking up the object and the timing of projecting light for the purpose of projecting a pattern onto the object, the unit comprising:

a projection light source configured to project light for the purpose of projecting the pattern onto the object;

a light projection information memory configured to store information on projection of light including information on the time for projecting light for the purpose of projecting the pattern in the continuous picking up;

<u>an operation section for allowing an operator to input the information on projection of light including information on the time for projecting light for the purpose of projecting the pattern in the continuous picking up;</u>

an image acquisition progress information memory configured to store information on the progress of the continuous picking up; and

a controller configured to control the projection of light by the projection light source in synchronism with the timing signal and on the basis of the information on projection of light stored in the light projection information memory and the information on the progress stored in the image acquisition progress information memory.

13. (Original) The apparatus according to claim 12, wherein the projection light source is adapted to project light in synchronism with a first imaging session of the continuous picking up.

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14. (Currently Amended) A 3-dimensional reconstruction system for acquiring images to be used for 3-dimensionally reconstructing an object by picking up the object twice or more than twice in an image acquisition set including picking up at least once the object carrying a pattern projected onto it, the system comprising:

a camera configured to pick up the object;

a projection light source configured to project light for the purpose of projecting the pattern onto the object;

a light projection information memory configured to store information on projection of light including information on the time for projecting light for the purpose of projecting the pattern in the image acquisition set;

an operation section for allowing an operator to input the information on projection of light including information on the time for projecting light for the purpose of projecting the pattern in the image acquisition set;

an image acquisition progress information memory configured to store information on the progress of image acquisition in the image acquisition set;

a controller configured to control the projection of light by the projection light source and the picking up by the camera on the basis of the information on projection of light stored in the light projection information memory and the information on the progress stored in the image acquisition progress information memory; and

a computer configured to 3-dimensionally reconstructing reconstruct the object on the basis of the images obtained by the camera.

15-27. (Cancelled)

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